

What is claimed is:

1. A DNA sequence encoding a protein or portion thereof, which inhibits vascular smooth muscle cell proliferation.

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2. The DNA sequence of claim 1, comprising the nucleotide sequence substantially as shown in Figure 1.

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3. The DNA sequence of claim 1, comprising the nucleotide sequence substantially as shown in Figure 3.

4. The DNA sequence of claim 1, comprising the nucleotide sequence from about 200 to about 1108 substantially as shown in Figure 1.

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5. The DNA sequence of claim 1, comprising the nucleotide sequence from about 749 to about 919 substantially as shown in Figure 1.

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6. The messenger RNA transcript of the DNA of claim 1.

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7. An isolated protein which inhibits vascular smooth muscle cell growth.

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8. The protein of claim 7 having a molecular weight of from about 30 kDa to about 36 kDa.

9. The protein of claim 7, comprising the amino acid sequence substantially as shown in Figure 1.

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10. The protein of claim 7, comprising the amino acid sequence substantially as shown in Figure 3.

11. The protein of claim 7, comprising the amino acid sequence from about 1 to about 303 substantially as shown in Figure 1.

5 12. The protein of claim 7, further comprising glutathione S-transferase.

13. A vector containing the DNA sequence of claim 1.

10 14. The vector of claim 13, wherein the nucleotide sequence is the nucleotide sequence of claim 2.

15. The vector of claim 13, wherein the nucleotide sequence is the nucleotide sequence of claim 3.

16. The vector of claim 13, wherein the nucleotide sequence is the nucleotide sequence of claim 4.

20 17. The vector of claim 13, wherein the nucleotide sequence is the nucleotide sequence of claim 5.

18. A host cell transformed by vector of claim 13 containing the nucleotide sequence coding for Gax protein.

25 19. A host cell transformed by vector of claim 14 containing the nucleotide sequence coding for Gax protein.

20. A host cell transformed by vector of claim 15 containing the nucleotide sequence coding for Gax protein.

30 21. A host cell transformed by vector of claim 16 containing the nucleotide sequence encoding the Gax protein.

35 22. A host cell transformed by vector of claim 17 containing the nucleotide sequence encoding the Gax protein.

23. A process for the preparation of Gax protein comprising culturing the transformed host of claim 18 under conditions suitable for the expression of Gax protein and recovering the Gax protein.

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24. A process for the preparation of a protein which inhibits the proliferation of vascular smooth muscle cells comprising culturing the transformed host of claim 19 under conditions suitable for the expression of the protein and recovering the protein.

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25. A process for the preparation of a protein which inhibits the proliferation of vascular smooth muscle cells comprising culturing the transformed host of claim 20 under conditions suitable for the expression of the protein and recovering the protein.

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26. A process for the preparation of a protein which inhibits the proliferation of vascular smooth muscle cells comprising culturing the transformed host of claim 21 under conditions suitable for the expression of the protein and recovering the protein.

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27. The Gax protein made by the process selected from the processes of claim 23, claim 24, claim 25, and claim 26.

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28. A method for inhibiting the proliferation of eukaryotic cells, comprising the following steps:

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a. providing nucleic acid sequence encoding a protein, or portion thereof, which inhibits vascular smooth muscle cell proliferation; and

b. administering said nucleic acid or said protein to the cells.

29. The method of claim 28 wherein the nucleic acid is DNA.

30. The method of claim 28 wherein the nucleic acid is RNA.

31. The method of claim 28 wherein the protein comprises the amino acid sequence from about 1 to 303 shown in Figure 1.

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32. The method of claim 28 wherein the cells are vascular smooth muscle cells.

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